REGION 21

700 MHz
PUBLIC SAFETY BAND
REGIONAL PLAN

700 MHz PLANNING COMMITTEE OFFICERS

Chairman:	Joe Turner
Secretary:	Keith M. Bradshaw
Treasurer:	Patricia Coates
Convener:	Richard DeMello

The Region Twenty-One 700 MHz Plan

APPENDICES

The Region 21 700 MHz Plan

SCOPE

Introduction

This is the second major planning thrust for Region 21. The first was to meet the Federal Communications Commission (FCC) requirements for the NPSPAC spectrum. This planning thrust was precipitated by the establishment of the 700 MHz public safety band.

The FCC announced the allocation of 24 MHz in the 700 MHz radio spectrum subsequent to the Public Safety Wireless Advisory Committee (PSWAC) report that established need requirements throughout the country. Interoperability within and among public safety and public service providers was identified in the PSWAC report as a basic minimum essential requirement.

Subsequent to the PSWAC the FCC established a Federal Advisory Committee called the National Coordination Committee (NCC). The NCC was created to address interoperability, technology, and implementation issues to be considered for the 700 MHz spectrum. The FCC required that a Regional Plan outlining the use of public safety radio frequencies be complete and approved of by the FCC before any agency within a region would receive channels from this new allocation. The Regional 21 Plan conforms to the NCC planning guidelines. The Region 21 committee's membership represents a cross-section of public safety and public service users. A Region Planning Committee membership list is contained in Appendix A.

Purpose

The purpose of the Regional Plan is to insure that maximum public benefit is derived from use of the 700 MHz spectrum by eligible agencies. Further, the plan was developed to guide eligibles through the application process and provide an equitable means of settling disputes concerning frequency allocations should they arise.

Plan Summary

First, Region 21 is defined as the entire State of Michigan. The broad classifications of entities eligible to apply for spectrum are defined in accord with NCC definitions. Next, to garner their participation in and support of the planning process, an attempt was made to contact all eligible agencies. These attempts are documented. The authority by which the Regional Planning Committee undertook these planning efforts is reviewed. A discussion follows of the process by which the initial spectrum allocation was made. Finally, a detailed discussion of the application process is given. This includes guidelines for spectrum use, application requirements, the application review process and dispute resolution. Also included is a discussion of the future planning process.

The Region 21 Committee accepts the Computer Assisted Pre-Coordination Resource and Database (CAPRAD) database initial allocation based on population density and call volume by county. It has been noted by the committee that this allocation closely matches the description of Designated Statistical Areas by the US Department of Management and Budget Bulletin 03-04 of June 6, 2003. See Appendix L. The Committee will use the CAPRAD database when allocating frequency resources in Region 21. Use of allocated frequencies in counties “north of Line A” are subject to international treaty obligations. Please see Title 47 Code of Federal Regulations Part 90.7 for the definition of Line A.

Interoperability guidelines and usage must be in accordance with the requirements of the State Interoperability Executive Committee (SIEC). Any conflict between the I/O rules for National Calling and Tactical channels in this plan and SIEC guidelines, the SIEC guidelines will prevail.

Television broadcasting activity is currently limited to approximately the southern half of the Region. Therefore, until February 18, 2009, assignments in certain aras of the state on channels where interference issues are anticipated will be made on the basis of the guidelines laid out in National Coordinating Committee (NCC) planning documents (see Appendix T). Frequency assignments which are secondary to Public Safety operations, such as television translator, Low Power TV stations, or other secondary assignments will not be granted interference protection. Licensees of transmitters located within the state of Michigan were notified of the last Public Hearing prior to finalization of the Plan. They will be notified again when the FCC has approved the Region 21 Plan, and a final time when applications for frequency assignment within the station's coverage area are received by the Region.

Region 21 Defined

Region 21 consists of the entire state of Michigan[1]. The total area is 56,809 square miles. The value of all taxable property in Region 21 in the year 2003 was estimated as Seven Hundred Thirty Nine Billion, Fifty Million, Ninety Four Thousand, Six Hundred Fifty Four dollars ($739,050,594,654). The population of this region is 9,938,444 based upon the 2000 US Census (Appendix L), a 6.9% increase since 1990. This Regional plan will consider the communication needs of all agencies currently eligible in the FCC Public Safety pool (PW). No other agencies within Region 21 that we are aware of have developed 700 MHz band plans.

[1] At the April 15,2001 planning committee meeting pursuant to FCC notice DA 01-58 of January 10,2001, the committee discussed modification of the region 21 boundaries. After consultation with region 54, the planning committee informed the FCC of its desire to modify region 21 boundaries to include the entire state of Michigan.

Definition of Eligible Entities

Eligible agency users are defined by the Public Safety Wireless Advisory Committee (PSWAC) and NCC as follows: Public safety – the public's right, exercised through Federal, State or Local government as prescribed by law, to protect and preserve life, property, and natural resources and to serve the public welfare. Public safety services – those services rendered by or through Federal, State or Local government entities in support of Public Safety duties. Public safety services provider – governmental and public entities or those non-government, private organizations, which are properly authorized by the appropriate governmental authority whose primary mission is providing Public Safety duties. Public services – those services provided by non-Public Safety entities that furnish, maintain, and protect the nation's basic infrastructures which are required to promote the public's safety and welfare.

Meetings, Public Notices and Meeting Attendance

A diverse group of individuals and agencies were invited to participate in the development of the Regional Plan. Notification was accomplished by LEIN, US mail, web page postings and e-mail sent to public safety and public service organizations and to organizations representing eligible agencies. In addition, Federal, State, Local, and Tribal government agencies concerned with National Security and Emergency Preparedness were contacted. Appendix B contains the notification list, Appendix E contains the initial convening information and Appendix F contains the minutes of the meetings. All Region 21 RPC meetings are open to the general public, as certified in Appendix W.

AUTHORITY

Regional Planning Committee Authority

Authority for the Regional Planning Committee to carry out its assigned tasks is derived from the Federal Communications Commission (FCC) Report and Order, Docket 96-86. The by-laws for Region 21 are contained in Appendix D of this plan.

National Interrelationships

The Region 21 700 MHz Plan conforms to the NCC planning documents. If there is a conflict between this plan, the NCC documents, or the FCC rules, the FCC rules will prevail. It is expected that Regional Plans for other areas in the country may differ from this plan due to their local needs. By officially sanctioning this Plan, the FCC agrees that it conforms to the NCC and FCC planning requirements. This Plan is not intended to conflict with the proper functions and duties of the frequency coordination entities in the Private Land Mobile Service. The Region 21 Plan provides procedures that are the consensus of the group of individuals involved in its development over several years. If there is a perceived conflict, the judgment of the FCC will prevail.

SPECTRUM ALLOCATION

Usage Guidelines

Systems operating in the Region must comply with all applicable FCC rules and regulations and the requirements of this Plan. Applications for the purpose of expanding exisiting systems will NOT be given consideration unless the applicant can demonstrate that the existing system is loaded to the criteria contained in this Plan.

Adjacent Region Coordination

Any applicant requesting frequency allocation(s) within 113 km (70 miles) of the border between Region 21 and the adjoining regions (including Region 54) must be coordinated with the effected adjoining Region. Applicants will be required to file identical applications with the Region 21 committee and the committee of the region or regions adjoining the proposed stations.

Application Requirements

This portion of the plan provides a basis for proper spectrum utilization. Its purpose is to evaluate the implementation of 700 MHz radio communication systems within the Region. Any applications for spectrum must be submitted after the date this plan is approved by the FCC and will be processed in the order they are received.

Agencies that desire spectrum must submit a complete application containing various documents as listed in Appendix G. The applicant may need to include a system design that incorporates base stations for use on the interoperability channels. This will be dependent upon the hierarchy of levels of government as listed on page 11, the geographic coverage of the proposed system, or the pre-existence of any other 700 MHz applications or systems in the same geographic area. Evaluation of applications for available spectrum is accomplished during the regularly scheduled MPSFAC meetings.

Applicants are encouraged to join larger existing systems whenever possible, or to form consortiums with neighboring agencies to create spectrum efficient new systems. As the 700 MHz spectrum is allocated, applicants for new systems surrounded by or adjacent to existing systems may be required to document as part of the application process the technical, functional, financial, or political reasons joining the existing system does not meet their requirements.

Interoperability

Interoperability between Federal, State and Local Governments during both daily and emergency and disaster operations will primarily take place on the interoperability channels. These channels are identified in this and the National Plan. Additionally, through the use of an S-160 or the MOU (see Appendix P) or equivalent agreements, a licensee may permit Federal use of non-Federal communications system spectrum.

Interoperability Requirements

All applicants shall submit an Interoperability Plan with their application. In this plan, the applicant shall:

A) identify the organizations with whom interoperable communications are to be achieved, and

B) stipulate how they will accomplish interoperable communications in their proposed system (for example, via gateway, switch, cross-band repeater, console cross patch, software defined radio, or other means.) with the agencies listed in A as well as for each of the following priorities:

1. Disaster and extreme emergency operation for mutual aid and interagency communications.
2. Emergency or urgent operation involving imminent danger to life or property.
3. Special event control. (Generally of a preplanned nature and including task force operations.)

Through proper consideration, design, and implementation, the best possible interoperability will be achieved.

Interoperability Responsibilities

Responsibility for the implementation of operation on the interoperability frequencies rests with:

1. The highest level of government submitting an application within or encompassing a given geographical area, or
2. The applicant whose proposed system coverage encompasses the largest geographical area, or
3. The first or "lead" agency in a multi-agency environment using 700 MHz frequencies in a given geographic area.

The hierarchy of levels of government shall be as follows:

1. The State of Michigan
2. Regional Consortiums or Multi-county systems
3. County systems
4. Multiple city, village or township Consortium systems
5. Single city, village, township or other eligible system

For Region 21, the largest geographic area and the highest level of government is the State of Michigan. Should the State of Michigan apply for a statewide 700 MHz system on channels outside the state channel block, their application must show the inclusion of interoperability frequencies according to state and regional area requirements. Otherwise, the next largest jurisdiction to apply must include provisions for wide area operation on the interoperability frequencies throughout their coverage area and so forth. System implementations must provide interoperability between area wide agencies as mandated by this plan. Such implementation must be reviewed and approved by the State Interoperability Executive Committee (SIEC) and Region 21.

Incident Command System Standard

Region 21 supports NCC recommendations regarding the National Incident Management System (NIMS) and ICS.

Coverage and Interference

Systems are to be designed and protected in accordance with the methods given in TIA/EIA Telecommunications Systems Bulletin TSB-88A and its addendums. Required engineering submittals are listed in Appendix G. Applicants which demonstrate compliance with 40 dB curve standards shall be deemed to have complied with the coverage requirements of this plan. Where a question of compliance arises, applicants shall demonstrate to the committee that they are in compliance with the applicable portions of TSB-88A and its addendums.

Those systems that are designed to provide "wide area" coverage must demonstrate their need to require such coverage. Communication coverage beyond the bounds of a jurisdictional area cannot be tolerated unless it is critical to the protection of life and property. Otherwise, strict criteria for limiting area of coverage to the boundaries of the applicant's jurisdiction must be observed. Overlapping or extended coverage must be minimized, even where "intermixed" systems are proposed for cooperative and/or mutual aid purposes.

Antenna heights are to be limited to provide only the necessary coverage for a system. When antenna locations are placed on the "high ground," reduced transmitter output ERP limits and special antenna patterns must be employed to produce the necessary coverage within and confined to the protected service area.

Interference complaints will be addressed in cooperation with the appropriate FCC certified frequency coordinators. In the event that the Committee determines adjacent channel interference is likely, the applicant will be required to provide the appropriate technical data in accord with the NCC Implementation Sub-Committee Simplified 700 MHz Pre-Assignment Rules Recommendation pp 132 - 134 (see Appendix Q). The Committee may require additional technical exhibits and documentation in order to conduct a full and proper evaluation of the complaints.

TV/DTV Protection

Analog television operations exist on some of the NTSC channels 60 through 69 in Region 21. Two areas of the region, Detroit (WWJ-TV 62) and Kalamazoo (WLLA -TV 64) are currently entitled to protection as primary TV operations until February 18, 2009. All other stations within the Region are televison translators or Low Power (LP) stations and are secondary to Public Safety operations. Some primary television assignments in IL, IN, OH, and WI may also be entitled to receive protection until February 18, 2009.

Applicants desiring to utilize channels prior to February 18, 2009 which are presently affected by incumbent Primary TV stations are required to protect these incumbents by:

a) utilizing geographic separation specified in the 40 dB Tables of 90.309, or

b) submitting an engineering study justifying other distance separations which the FCC approves, or

c) obtaining concurrence from the applicable TV station (see Appendix T).

Loading

Per-channel block loading requirements are given in Appendix G.

Channel Reuse

All necessary precautions will be taken to gain maximum reuse of the limited 700 MHz spectrum. The distance between transmitters for co-channel reuse will be determined through the use of TR 8.8 standards. Consideration will be given to the coverage needs of the applicant, natural barriers for separation, antenna patterning, and limiting ERP where possible. System tests and/or propagation studies should be provided to establish minimum distances for separation.

The Regional Committee shall be responsible for reviewing the engineering submittals on an application. Applicants will submit additional relevant documents to the FCC certified coordinators as the MPSFAC deems necessary.

Reassignment of Existing Frequencies

Applicants shall furnish the committee with a list of agencies transitioning to the 700 MHz system. At the time of application, the applicant must provide a Letter of Intent listing all frequencies per agency to be relinquished if 700 MHz allocations are granted and an anticipated date the frequencies will be relinquished. This document will be submitted as a condition of license grant by the FCC. At the time the applicant files a Construction Completion Notification and /or final Slow Growth Imp[lementation Report with the FCC, a copy of these documents shall immediately be provided to the Michigan Public Safety Frequency Advisory Committee. When the transition to the 700 MHz band has been completed, the VHF and UHF frequencies presently licensed to an applicant and listed for relinquishment shall be returned to the frequency pool for reassignment.

However, the Committee recognizes that it may be necessary for an applicant to maintain certain operations on legacy systems. Therefore, applicants desiring to maintain such legacy operations must submit a request to retain each existing frequency in writing. This request must specify the current as well as the future use of the requested legacy frequency.

Frequencies not approved for retention will be returned to the pool by cancellation of those frequencies from the appropriate FCC license(s). It shall be the responsibility of the licensee to cancel all frequencies not approved for retention from their FCC Licenses. Normal application and coordination procedures will be followed with returned channels.

It is not consistent with the goals and objectives of this Region to permit the direct reassignment of radio frequencies between agencies. Similarly, agencies shall not "farm down" or otherwise make frequencies available to other radio services within their political structure.

Channel Assignment

The applicant evaluation criteria established in the NCC process and further defined in this Regional plan are to be complied with. In cases where more than one applicant requires a specific allotment, the Competing Application Evaluation Matrix will be utilized to determine the successful applicant. In all cases, area of coverage criteria, technical requirements, and channel loading criteria will be applied, except upon unique circumstances after review and approval from the MPSFAC. No deviation from FCC rules is to be approved unless a fully justifiable waiver has been presented to the MPSFAC.

Expansion of Existing NPSPAC Systems

Existing NPSPAC systems that are to be expanded to include the frequency bands of 700 MHz will have to separately meet the requirements of the Region 21 plans on each band. They must maintain compliance with the NPSPAC plan and the 700 MHz plan also.

FREQUENCY ALLOTMENT METHODOLOGY

Allotment Process

The Region 21 700 MHZ Planning Committee accepts the NLECTC database as the official allotment for Region 21. See Appendix O for explanation. The sorted channel assignments by county are given in Appendix N.

Application Review

The flow chart entitled "Application Review Matrix" presents the sequence of events that will be followed in the allocation of the 700 MHz spectrum. The flow chart may be found in Appendix M.

Applications are received and reviewed by the MPSFAC (Block #I & II). If the application is not in compliance with SIEC requirements (Block #III) and Regional Plan requirements, the application will be rejected at this point and returned to the applicant with an explanation of the reason(s) for rejection. If there are no competing applications to be considered, the application will be populated with channels and be forwarded to the frequency coordinating body of choice (Block #V and beyond). The Competing Application Evaluation Matrix will be used when competition for spectrum arises.

Competing Application Dispute Resolution

The implementation of the Competing Application Evaluation Matrix (see Appendix M) will result in the award of a score for each application. The application score is the total number of the points awarded in eight categories. The applicant with the highest total score will have their application processed and supported for frequency coordination. Others will be returned to the applicant if no spectrum is available. The eight categories are as follows:

1. Service and Use (Block #1) – maximum score 360 points. Each of the eligible services, and each use, has a predetermined point value. Total points for this block will be the sum of the point assignments for each service and use the system is to support.

SERVICE	Points
Federal	24
Tribal Nation	24
State	24
Local Gov	24
Police	24
Special Emerg./EMS	24
Emergency Management	24
Fire	24
Forestry Consv.	24
Highway Maint.	24
USE	
Rescue	40
Safety of Life and Property	40
Environmental Protection	40
Maximum Total	360

Environmental protection shall be considered tasks that directly reduce any contamination to the air, water or ground by chemicals or waste materials.

2. Interoperability Diversity (Block #2) – maximum score 100 points.

The application is scored on the degree of interoperability that is demonstrated, with range of points from 0 to 100. This category does not rate the application on the inclusion of the mandated interoperability channels. This category does rate the application on its proposed ability to communicate with different levels of government and services during times of emergency.

Each applicant is encouraged to have direct mobile-to-mobile communications among the Federal, State, and Local Government, Tribal Nations, police, special emergency-EMS, fire, forestry conservation and highway maintenance radio services. All applications start with 100 points and points are deducted based upon their lack of intersystem communications.

Deducts

Deduct 10 points for each radio service type function in which the applicant lacks communication at the operator position via console patch or other means, when direct mobile-to-mobile communication does not exist. Radio services type functions are stated above.

Deduct five points for each radio service that the applicant lacks direct mobile-to-mobile communications with. Radio services type functions are stated above.

3. Cooperative Use (Block #3) – maximum score 150 points. Those applications that have demonstrated that they are part of cooperative, multi-organization systems will be scored depending upon the extent of the cooperative system.

System Points

Multi agency trunked system fully loaded	150
Trunked system fully loaded/channel	100
Conventional system fully loaded/channel	75

Expansion of Existing Systems

As it is the intent of this plan to promote cooperative use of the spectrum, expansion of an existing system will be given greater competitive weight than a competing new system. Therefore, the point award from the aforementioned category will be doubled as,

System Points (from previous category) X 2 = Score.

4. Spectrum Efficient Technology (Block #4) maximum score 125 points.

This category scores the applicant on the degree of spectrum efficient technology that the system demonstrates. A point value range of 0 to 100 points can be awarded for this category. Technologies that are designed to provide for more efficient spectrum use shall be awarded twenty-five (25) additional points.

Spectrum Efficiency Points.

Description	Points
Trunked System, voice only on narrow channels	50
Trunked System, voice and data or equally efficient Technology	100
Conventional System using MDT on wide channels	50
Technologies that result in increased system throughput	add 25

5. This section (Block #5) gives municipalities consideration for the impact of urban sprawl. If they have recently established or plan to establish a public safety agency with approved funding and they do not yet have any radio frequencies allocated, they will receive 150 points.

Applicants requesting initial radio frequency(ies) for the purpose of communicating vital voice messages.	150

6. Systems Implementation Factors (Block #6) – maximum score 100 points.

This category scores the applicant on two factors, budgetary commitment and planning completeness. The degree of budgetary commitment is scored on a range of 0 to 50 points. An applicant who demonstrates a high degree of commitment in funding the proposed system will receive the higher score. Each applicant will be scored on the degree of planning completeness with a range of scoring from 0 to 50 points. Applicants will be required to submit a timetable for the implementation of the communications system or systems.

Description	Points
Multi Phase Project with the applicant committing funds to all phases.	50
Multi phase project plan completed for all phases	50

Applicants with less than a complete funding commitment and/or incomplete plan will have their point score reduced accordingly. Resolutions shall be included in each plan stating the applicants governing boards (or equal) financial commitment.

7. System Density (Block #7)

Each applicant will be scored on the ratio of subscriber units to the area covered.

System Density Points

(Total number of subscriber units) / (Area in square miles) x 100 = score.

8. Givebacks or relinquished Frequency(ies) (Block #8) – maximum score 200 points. The applicant is scored on the number of channels given back. The greater the number of channels given back, the higher the score.

Scoring: Number frequencies to be Relinquished x 10 = Score

Points are totaled for each competing application (Block #SUM).

The competing applications are prioritized based on the total number of points each has received in the evaluation process. The application with the higher score will then proceed with the approval process. The application with the lower score will be returned to the applicant. The applications (Block #VI) are sent to the PW coordinated requested by the applicant. Subsequent to coordination approval (Block #VII) the FCC would grant the license(s) to the applicant (Block #VIII).

This plan has been prepared to enable consistent evaluation of competing applications. Variation within the parameters of this plan and submitted application and/or plans may require extensive evaluation. Therefore the MPSFAC shall evaluate each plan or situation on its own merit, as well as on a relative basis to other competing applications.

REGIONAL COMMITTEE

The Michigan Public Safety Frequency Advisory Committee shall be responsible for the frequency coordination of the application. This shall include making a determination about the engineering of the system, ERP, coverage, and compliance with FCC requirements.

System Implementation

Should system implementation not begin (award of contract) within a two-year period or if projected channel loading is not attained within four years after the granting of license(s), the channel(s) will be returned for reassignment to others. A one-year extension may be supported by the MPSFAC depending upon circumstances that are beyond the control of the applicant. The applicant will be responsible to contact the FCC to request an extension from the Commission. Any applicant must be doing all in their power to implement the project within their authority.

The MPSFAC will determine if progress is being made on the implementation of the system (Block #IX & X). Monitoring of systems implementation by the MPSFAC will take place at intervals not longer than one-year. If progress is made, the system is implemented (Block #XI). If progress is not made, the licensee is advised of the consequences and the MPSFAC informs the PW frequency coordinator of the situation (Block #XII). The MPSFAC continues to monitor progress on the implementation of the system (Block #IX). If progress is still not being made in the next evaluation period, the licensee is notified of the pending action of the MPSFAC to advise FCC of lack of progress (Block #XIII).

The notified licensee can appeal this action (Block #XIV) or can allow the license to be cancelled or withdrawn. If the authorized frequencies are withdrawn they are added back to the frequency allotment pool (Block #XVI).

Appeal Process

Throughout the application review and frequency allotment process, applicants are given opportunities to appeal decisions that have caused the rejection of their application. The appeal process has two levels: the MPSFAC and the FCC. An applicant who decides to appeal a rejection should initiate that appeal within ten (10) business days after receiving the decision. In the event that an appeal reaches the second level, the FCC, the FCC decision will be final and binding upon all parties. The Region 21 appeal process is contained in Appendix H.

Future Planning Process

The Michigan Public Safety Frequency Advisory Committee (MPSFAC) shall serve as the Plan Update Committee. This committee's responsibility is to recommend changes in the Plan and resolve interregional problems that may arise. The MPSFAC shall also be responsible for receiving, reviewing, considering, and acting on applications as well as updating the database for spectrum in the 700 MHz band. The CAPRAD Administrator and Alternate Administrator will each be members of the MPSFAC committee with voting privileges. MPSFAC committee structure and routine duties are contained in Appendix U.